

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Naoko Ikegaya

Serial No.: 10/788,453

Filed: March 1, 2004

For: METHOD OF MONITORING STATUS INFORMATION OF REMOTE  
STORAGE AND STORAGE SUBSYSTEM**PETITION TO MAKE SPECIAL  
UNDER 37 CFR 1.102(d) and MPEP. §708.02, VIII****MS Petition**Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

February 16, 2005

Sir:

**1. Petition**

Applicants hereby petition to make this application **Special**, in accordance with 37 CFR §1.102(d) and MPEP 708.02, VIII. The present invention is a new application filed in the United States Patent and Trademark Office on March 1, 2004 and as such has not received any examination by the Examiner.

**2. Claims**

Applicants hereby represent that all the claims in the present application are directed to a single invention. If upon examination it is determined that all the claims presented are not directed to a single invention, Applicants will make an election without traverse as a prerequisite to the granting of special status.

### 3. Search

Applicants hereby submit that a pre-examination search has been made by a professional searcher.

The field of search covered:

<u>Class</u>	<u>Subclasses</u>
707/	DATA PROCESSING: DATABASE AND FILE MANAGEMENT OR DATA STRUCTURES
10	.Distributed or remote access
200	FILE OR DATABASE MAINTENANCE
201	.Coherency (e.g., same view to multiple users)
204	..Archiving or backup
711/	ELECTRICAL COMPUTERS AND DIGITAL PROCESSING SYSTEMS: MEMORY
114	....Arrayed (e.g., RAIDs)
162	...Backup

The above subclasses represent areas deemed to contain subject matter of interest to one or more of the search features. Please note that relevant references may be classified outside of these areas. The integrity of the search is based on the records as presented to us by the United States Patent and Trademark Office (USPTO). No further integrity studies were performed. Also a key word search was performed on the USPTO full-text database including published U.S. patent applications.

### 4. Copy of References

A listing of all references found by the professional searcher is provided by a Form PTO-1449 and copies of the references and the Form PTO-1449 are submitted as part of an Information Disclosure Statement (IDS) filed on even date.

## **5. Detailed Discussion of the References and Distinctions Between the References and the Claims**

Below is a discussion of the references uncovered by the search and cited in the IDS filed on even date that appear to be most closely related to the subject matter encompassed by the claims of the present application, and which discussion particularly points out how Applicants' claimed subject matter is distinguishable over those references. All other references uncovered by the search and cited in the IDS filed on even date are **not** treated in detail herein.

### **a. Detailed Discussion of the References**

Kern et al (U.S. Patent No. 6,484,187 B1) provides for Coordinating Remote Copy Status Changes across Multiple Logical Sessions to Maintain Consistency. Disclosed is a secondary DASD 122 not directly connected to a host 106 and maintained a consistent and concurrent image of a primary DASD 108. A system data mover 130 coordinates remote copy status changes (step 618) (see figures 1A-1B; and column 5, lines 6-9).

Burton et al (U.S. Patent No. 6,526,419 B1) provides for a Method, System, and Program for Remote Copy in an Open Systems Environment. Disclosed is a write command used to write status information to status storage areas indicating status of shadowed data at the secondary storage areas (in pairs) (see figures 1, 3; and column 2, lines 22-30 and 39-51).

Sicola et al (U.S. Patent No. 6,658,540 B1) provides for a *Method for Transaction Command Ordering in a Remote Data Replication System*. Disclosed are two LUNs (logical units) 410 and 410'. The LUN X' (410') is used as a backup device of LUN X (410). A target controller B1 (of LUN X' (410')) sends a completion

status back to an initiator controller A1. Once peer-to-peer remote copy (PPRC) manager 515 (in controller A1) has received a completion status from target controller B1, the manager 515 then notifies "value added" (VA) 530 (then to host 101) (see figures 1, 4-5; column 8, lines 60-67; column 9, lines 1-28; column 12, lines 10-25; and column 13, lines 3-25).

Nakamura et al (U.S. Patent Application Publication No. 2002/0078296 A1) provides for a Method and Apparatus for Resynchronizing Paired Volumes via Communication Line. Disclosed is a disk array subsystem controller 120 and a service processor panel 121 on which a user can monitor an execution status of a remote copy. The MCV 102 manages a copy execution status of a paired logical volumes formed by a pair of P-VOL 108 and an S-VOL-111 as a copy target. The 'duplex' and 'suspend' status can be transisted by a command which is issued by the service processor panel 121 of the disk subsystem (see figures 1-2, 6-7; and paragraphs 8-9, 20, 28, 30, 34-35, and 45).

Kimura et al (U.S. Patent Application Publication No. 2003/0078903 A1) provides for an Information Storage System. Disclosed is a subsystem with a remote control unit 115 (disk units 110). A group status 333 indicates the present status of the group (see figure 1; and paragraphs 23, 28, 30, 32, 33, and 48-49).

#### **b. Distinctions Between the References and the Claims**

The present invention as recited in the claims is not taught or suggested by any of the above noted references whether taken individually or in combination with each other or in combination with any of the other references now of record.

The present invention as recited in the claims is a storage subsystem, a

computer system connected to the storage subsystem and a status information acquisition method. According to the present invention, a host computer acquires remote copy status information of storage systems that are not directly coupled to the host computer.

The present invention provides that each storage system includes a unit which receives a status information acquisition command from the host computer, a unit which analyzes the received command to judge whether the storage subsystem is a target of the command, a unit which sends the command to a down-stream storage subsystem connected to the storage subsystem when the storage subsystem is not the target; and a unit which sends status information to an up-stream storage subsystem connected to the storage subsystem wherein the status information is received from the down-stream storage subsystem.

The above described features of the present invention as recited in the claims are not taught or suggested by any of the above described references of record.

Particularly, for example, the above described features of the present invention as recited in the claims are not taught or suggested by Kern whether taken individually or in combination with any of the other references of record. Kern discloses a multi-session data storage facility which coordinates similar status changes across all sessions at appropriate times such that updates to a primary DASD are transferred to the secondary control unit for storage in the secondary DASD to assure that the secondary DASD maintains a consistent and concurrent image of the primary DASD. As taught by Kern, a system data mover communicates with the primary control unit and the secondary control unit and manages the transfer of updates to the secondary DASD from the primary DASD.

The above described teachings of Kern do not anticipate nor render obvious the features of the present invention as recited in the claims.

The above noted deficiencies of Kern are also evident in each of the other references described above. Therefore, none of the above described references whether taken individually or in combination with each other teach or suggest the features of the present invention as recited in the claims.

**6. Fee (37 C.F.R. 1.17(i))**

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

☒ the Credit Card Payment Form (attached) for \$130.00.

☐ charging Account \_\_\_\_\_ the sum of \$130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (566.43577X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.



\_\_\_\_\_  
Carl I. Brundidge  
Registration No. 29,621

CIB/jdc  
Enclosures  
703) 684-1120

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

<b>PETITION FEE</b> Under 37 CFR 1.17(f), (g) & (h) <b>TRANSMITTAL</b> (Fees are subject to annual revision)  Send completed form to: Commissioner for Patents P.O. Box 1450, Alexandria, VA 22313-1450	Application Number	10/788,453
	Filing Date	March 1, 2004
	First Named Inventor	N. IKEGAYA
	Art Unit	
	Examiner Name	
	Attorney Docket Number	566.43577

Enclosed is a petition filed under 37 CFR 1.102(d) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of \$ 130.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

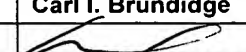
**Payment of Fees** (small entity amounts are NOT available for the petition (fees))

- ☒ The Commissioner is hereby authorized to charge the following fees to Deposit Account No. 50-1417:
- ☐ petition fee under 37 CFR 1.17(f), (g) or (h) ☒ any deficiency of fees and credit of any overpayments
- Enclose a duplicative copy of this form for fee processing.

☐ Check in the amount of \$ \_\_\_\_\_ is enclosed.

☒ Payment by credit card (From PTO-2038 or equivalent enclosed). Do not provide credit card information on this form.

<b>Petition Fees under 37 CFR 1.17(f):</b> For petitions filed under: § 1.53(e) - to accord a filing date. § 1.57(a) - to according a filing date. § 1.182 - for decision on a question not specifically provided for. § 1.183 - to suspend the rules. § 1.378(e) for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent. § 1.741(b) - to accord a filing date to an application under §1.740 for extension of a patent term.	Fee \$400	Fee Code 1462
<b>Petition Fees under 37 CFR 1.17(g):</b> For petitions filed under: §1.12 - for access to an assignment record. §1.14 - for access to an application. §1.47 - for filing by other than all the inventors or a person not the inventor. §1.59 - for expungement of information. §1.103(a) - to suspend action in an application. §1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available. §1.295 - for review of refusal to publish a statutory invention registration. §1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued. §1.377 - for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent. §1.550(c) - for patent owner requests for extension of time in <u>ex parte</u> reexamination proceedings. §1.956 - for patent owner requests for extension of time in <u>inter partes</u> reexamination proceedings. § 5.12 - for expedited handling of a foreign filing license. § 5.15 - for changing the scope of a license. § 5.25 - for retroactive license.	Fee \$200	Fee code 1463
<b>Petition Fees under 37 CFR 1.17(h):</b> For petitions filed under: §1.19(g) - to request documents in a form other than that provided in this part. §1.84 - for accepting color drawings or photographs. §1.91 - for entry of a model or exhibit. §1.102(d) - to make an application special. §1.138(c) - to expressly abandon an application to avoid publication. §1.313 - to withdraw an application from issue. §1.314 - to defer issuance of a patent.	Fee \$130	Fee Code 1464

Name (Print/Type)	Carl I. Brundidge	Registration No. (Attorney/Agent)	29,621
Signature		Date	February 16, 2005

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.